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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/747,496	12/21/2000	Loa Andersson	2447/105	8282
2101	7590	03/26/2004	EXAMINER	
BROMBERG & SUNSTEIN LLP 125 SUMMER STREET BOSTON, MA 02110-1618			EL CHANTI, HUSSEIN A	
			ART UNIT	PAPER NUMBER
			2157	6

DATE MAILED: 03/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/747,496

Applicant(s)

ANDERSSON ET AL.

Examiner

Hussein A El-chanti

Art Unit

2157

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-100 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-100 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. This action is responsive to application filed on Dec. 21, 2000. Claims 1-100 are pending examination.

#### ***Drawings***

2. Formal Drawings are required to be submitted by applicant.

#### ***Claim Objections***

3. A series of singular dependent claims is permissible in which a dependent claim refers to a preceding claim which, in turn, refers to another preceding claim.

A claim which depends from a dependent claim should not be separated by any claim which does not also depend from said dependent claim. It should be kept in mind that a dependent claim may refer to any preceding independent claim. In general, applicant's sequence will not be changed. See MPEP § 608.01(n).

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-3, 5-29, 57, 87 and 93-100 are rejected under 35 U.S.C. 102(e) as being anticipated by Baskey et al., U.S. Patent No. 6,148,410 (referred to hereafter as Baskey).

As to claims 1, 29 and 57, Baskey teaches a method, device and computer for bypassing a network change by a node in a communication network, the method comprising:

pre-determining a recovery path for bypassing a network change that affects communications over a primary path (see col. 3 lines 40-67);

detecting the network change that affects communications over the primary path (see col. 3 lines 49-55); and

switching communications from the primary path to the recovery path in order to bypass the network change (see col. 3 lines 62-67).

As to claim 2, Baskey teaches the method of claim 1, wherein pre-determining the recovery path for bypassing the network change comprises:

establishing as the recovery path a label switched path that bypasses the network change (see col. 3 lines 62-67).

As to claim 3, Baskey teaches the method of claim 1, wherein pre-determining the recovery path for bypassing the network change comprises:

logically introducing the network change into a routing database (see col. 4 lines 54-67); and

determining the recovery path based upon a pre-determined path determination scheme (see col. 4 lines 54-67).

As to claim 5, Baskey teaches the method of claim 1, wherein pre-determining the recovery path for bypassing the network change comprises: installing the recovery path in a forwarding table (see col. 4 lines 54-67).

As to claim 6, Baskey teaches the method of claim 1, wherein detecting the network change that affects communications over the primary path comprises: using a fast liveness protocol to detect the network change (see col. 3 lines 20-46).

As to claim 7, Baskey teaches the method of claim 1, wherein the network change comprises a link failure (see col. 5 lines 7-28).

As to claim 8, Baskey teaches the method of claim 1, wherein the network change comprises a node failure (see col. 5 lines 7-28).

As to claim 9, Baskey teaches the method of claim 1, wherein the network change comprises a routing change (see col. 5 lines 7-28).

As to claim 10, Baskey teaches the method of claim 1, wherein switching communications from the primary path to the recovery path in order to bypass the network change comprises: activating the recovery path (see col. 5 lines 7-28).

As to claim 11, Baskey teaches the method of claim 10, wherein activating the recovery path comprises: removing the primary path from a forwarding table (see col. 4 lines 54-67).

As to claim 12, Baskey teaches the method of claim 10, wherein activating the recovery path comprises: blocking the primary path in a forwarding table (see col. 4 lines 54-67).

As to claim 13, Baskey teaches the method of claim 10, wherein activating the recovery path comprises: marking the recovery path as a higher priority path than the primary path in a forwarding table (see col. 3 lines 49-col. 4 lines 39).

As to claim 14, Baskey teaches the method of claim 1, wherein switching communications from the primary path to the recovery path in order to bypass the network change comprises: forwarding all communications from the primary path over the recovery path (see col. 5 lines 64-col. 6 lines 25).

As to claim 15, Baskey teaches the method of claim 1, wherein switching communications from the primary path to the recovery path in order to bypass the network change comprises: forwarding some communications from the primary path over the recovery path based upon a predetermined priority scheme (see col. 3 lines 49-col. 4 lines 39).

As to claim 16, Baskey teaches the method of claim 15, wherein the predetermined priority scheme comprises an IP Differentiated Services scheme (see col. 1 lines 29-41).

As to claim 17, Baskey teaches the method of claim 1, further comprising: determining a new primary path (see col. 5 lines 5-25).

As to claim 18, Baskey teaches the method of claim 17, wherein determining the new primary path comprises: receiving routing information; and computing the new primary path based upon the routing information (see col. 8 lines 40-67).

As to claim 19, Baskey teaches the method of claim 17, further comprising: activating the new primary path (see col. 8 lines 40-67).

As to claim 20, Baskey teaches the method of claim 19, further comprising: switching communications from the recovery path to the new primary path after activating the new primary path (see col. 8 lines 1-39).

As to claim 21, Baskey teaches the method of claim 19, wherein determining the new primary path and activating the new primary path comprise:

freezing a forwarding table after switching communications from the primary path to the recovery path;

computing the new primary path while the forwarding table is frozen; and

coordinating activation of the new primary path with at least one other node in the communication network (see col. 8 lines 1-39).

As to claim 22, Baskey teaches the method of claim 21, wherein coordinating activation of the new primary path with at least one other node in the communication network comprises: using a timer to determine when to activate the new primary path (see col. 11 lines 11-30).

As to claim 23, Baskey teaches the method of claim 21, wherein coordinating activation of the new primary path with at least one other node in the communication network comprises: using a predetermined diffusion mechanism to determine when to activate the new primary path (see col. 11 lines 11-30).

As to claim 24, Baskey teaches the method of claim 21, wherein coordinating activation of the new primary path with at least one other node in the communication network comprises: receiving a signal from a master node; and activating the new primary path upon receiving the signal from the master node (see col. 3 lines 49-col. 4 lines 39).

As to claim 25, Baskey teaches the method of claim 21, wherein coordinating activation of the new primary path with at least one other node in the communication network comprises: receiving signals from a number of slave nodes; determining that the number of slave nodes have completed computing new primary paths; and activating the new primary path upon determining that the number of slave node have completed computing new primary paths (see col. 3 lines 49-col. 4 lines 39).

As to claim 26, Baskey teaches the method of claim 25, further comprising: sending a signal to the number of slave nodes (see col. 7 lines 18-52).

As to claim 27, Baskey teaches the method of claim 17, further comprising: computing a new recovery path to protect the new primary path (see col. 7 lines 18-52).



As to claim 28, Baskey teaches the method of claim 19, further comprising:  
computing a new recovery path after activating the new primary path (see col. 7 lines 18-52).

As to claim 87, Baskey teaches a communication system comprising a plurality of interconnected communication nodes, wherein primary paths are established for forwarding information and recovery paths are pre-computed for bypassing potential primary path failures (see col. 3 lines 40-67).

As to claim 93, Baskey teaches a method for reconverging routes in a communication network, the method comprising: determining that a route change is needed;

freezing forwarding tables so that a predetermined set of routes is used during reconvergence; and

reconverging on a new set of routes while the forwarding tables are frozen (see col. 3 lines 40-67 and col. 8 lines 1-39).

As to claim 94, Baskey teaches the method of claim 93, further comprising:  
activating the new set of routes in a coordinated manner.

As to claim 95, Baskey teaches the method of claim 94, wherein activating the new set of routes in a coordinated manner comprises: starting a timer by each of a number of nodes in the communication network upon determining that reconvergence is

needed; and activating the new set of routes by each of the number of nodes upon expiration of the timer (see col. 9 lines 21-32).

As to claim 96, Baskey teaches the method of claim 94, wherein activating the new set of routes in a coordinated manner comprises: using a predetermined diffusion mechanism by each of the number of nodes to determine when reconvergence is complete; and activating the new set of routes by each of the number of nodes upon determining that reconvergence is complete (see col. 3 lines 49-col. 4 lines 39).

As to claim 97, Baskey teaches the method of claim 94, wherein activating the new set of routes in a coordinated manner comprises: designating one of the number of nodes as a master node and designating the remaining nodes as slave nodes; sending a first signal by each of the slave nodes to the master node upon reconverging on the new set of routes; and sending a second signal by the master node to the slave nodes upon receiving the first signal from each of the slave nodes (see col. 8 lines 5-39).

As to claim 98, Baskey teaches a use of a bypass mechanism for bypassing a network change in a communication network, the use comprising: using the bypass mechanism to pre-compute a recovery path for bypassing a network change affecting communication over a primary path, detect the network change affecting communication over the primary path, and switch communications from the primary path to the pre-computed recovery path upon detecting said network change (see col. 8 lines 5-39).

As to claim 99, Baskey teaches the use of claim 98, further comprising: using the bypass mechanism to compute a new primary path after switching communications

from the primary path to the pre-computed recovery path; and using the bypass mechanism to switch communications from the pre-computed recovery path to the new primary path (see col. 8 lines 5-39).

As to claim 100, Baskey teaches the use of claim 99, further comprising: using the bypass mechanism to compute a new recovery path for bypassing a network change affecting communication over the new prima (see col. 7 lines 19-40).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baskey in view of Mann et al., U.S. Patent No. 6,314,093 (referred to hereafter as Mann).

Baskey teaches a method of pre-determining a recovery path for bypassing a network change that affects communications over a primary path, detecting the network change that affects communications over the primary path and switching communications from the primary path to the recovery path in order to bypass the network change (see rejection of claim 1).

Baskey does not explicitly teach the limitation "the pre-determined path determination scheme comprises a shortest-path-first computation". However Mann

teaches a method of determining a shortest-path between two nodes in a computer network (see abstract).

It would have been obvious for one of the ordinary skill in the art at the time of the invention to modify Baskey by incorporating the step of determining a shortest route as taught by Mann because doing so would allow the user to use the most efficient route available and therefore achieving fastest and most efficient communication between two given nodes on a network.

6. Claims 30-56, 58-86 and 88-92 do not teach or define any additional limitation over claims 1-29, 57, 87 and 93-100 and therefore are rejected for similar reasons.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Router Switches To Old Routing Table When Communication Failure Caused By Current Routing Table And Investigates The Cause Of The Failure by Aramizu et al., U.S. Patent No. 6,625,659.
- Recovery Of Distributed Hierarchical Data Access Routing System Upon Detected Failure Of Communication Between Nodes by Wilby et al., U.S. Patent No. 5,941,955.
- Network Fault Recovery Method And Apparatus by Shew et al., U.S. Patent No. 6,530,032
- Telecommunications Network Distributed Restoration Method And System by Baniewicz et al., U.S. Patent No. 6,512,740.

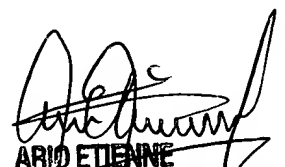
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hussein A El-chanti whose telephone number is (703)305-4652. The examiner can normally be reached on Mon-Fri 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (703)308-7562. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hussein El-chanti

March 16, 2004

  
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